

# Breath: The New Science of the Lost Art

by James Nestor

Bikram Yoga Capital Area - Book Discussion #3 of 3  
Questions for 1/11/2021, Chapters 8 - 10

## General Discussion Questions

### Chapter 8: More, On Occasion

1. Consider the various post-combat illness that have affected soldiers from the Civil War (and probably well before then) to the present. The author states that “doctors dreamed up new names for these problems along the way, believing they had discovered a new kind of illness” (p. 142). (shell shock, soldier’s heart, post-Vietnam syndrome, PTSD). However, the same symptoms were known and treated by the St. Thomas doctor Da Costa since the 1860s. What did Da Costa say that he was dealing with? (bottom of p. 142)

a disorder of the \_\_\_\_\_

2. List functions that each part of the autonomic nervous system regulates (pp. 144-45):

PARASYMPATHETIC

SYMPATHETIC

3. Explain how “**where**” and **how** you breathe (for example: upper chest, shallow vs.abdominal-moving, slow) affect the two aspects of the autonomic nervous system, and some of the likely effects on your system of those ways of breathing.

4. Think of the Bikram Yoga techniques (postures, muscle contractions, positions, breathing exercises) that are used throughout the class. List a few examples of how certain techniques would likely induce certain responses of the sympathetic or parasympathetic nervous system.

(Please feel free to speculate, but back it up with a physiological explanation):

5. After reading these chapters, would you continue to characterize the autonomic nervous system as wholly “automatic”, not in your conscious control, etc.? Why or why not?

6. Consider this passage by the author (p. 145):

*“That negative energy you feel when someone cuts you off in traffic or wrongs you at work is the sympathetic system ramping up.”*

This is very interesting to me, in relation to one the most central demands of yoga:  
i.e. that we respond purposefully rather than out of habit/compulsion/automatic knee-jerk reaction.

There are many behaviors out there, some friendly, some generous, some truly caring and loving, some rude, some thoughtless, some abusive/manipulative, some neutral.

I would say that discerning the behavior of others is important, and so is setting boundaries and protecting ourselves, when the behaviors are damaging.

However, what do you think about the fact that the “**negative energy we feel**” in certain situations seems to actually be our own inability to breathe well in response?

Can you list or share any examples of a situation that one might label “negative energy”, and your response to it?

Do we serve our own personal growth if we label the behavior as “negative energy” and keep all of the responsibility with the other party?

How can we take responsibility for our own part in the interaction?

(Please feel free to also journal about this on your own.)

7. What is the vagus nerve, and what does it do?

a. How does the author characterize the vagal system of “most humans”?

b. What does chronic stress do to the vagal system?

8. Please see p. 156, third full paragraph. In this description of Tummo breathing / Wim Hof’s breathing method, do you notice any similarities to the Bikram Yoga method, or some of the results of the method?

9. What do you think about the Holotropic Breathwork / LSD / “near-death” experiences? Have you had any experiences that seem related or similar? (Related reading: **How to Change the Mind**, by Michael Pollan).

## Chapter 9: Hold It

1. What is the part of the brain called that allows for or creates **fear**?
2. In the absence or lack-of-function of this part of the brain, what other situation/mechanism can contribute to sensations of panic/fear?

3. Introducing Justin Feinstein. According to his research and expertise:

*Anxieties are* \_\_\_\_\_ (p. 167)

*On a neuronal level, anxieties are* \_\_\_\_\_ (also p. 167)

What was the other way that Feinstein was able to induce a panic/anxiety attack? (168-69)

\_\_\_\_\_

4. What molecule to the central chemoreceptors respond to?
5. Please characterize the following as either “**C**” (conscious breathholding) or “**U**” (unconscious breathholding):
  - a. CO2 therapies - \_\_\_\_\_
  - b. Breathholding hacks - \_\_\_\_\_
  - c. “Email apnea” - \_\_\_\_\_
6. Do you have or have you had a pattern of unconscious breathholding? Please feel free to elaborate.

7. List three physiological effects of exposing the body to carbon dioxide (footnote p. 174):

a. \_\_\_\_\_

b. \_\_\_\_\_

c. \_\_\_\_\_

8. Consider CO<sub>2</sub> exposure therapies such as certain thermal baths and the research and clinical experience of using inhaled CO<sub>2</sub> (used until the 1950s on asthma, bronchitis, eczema, anxiety, epilepsy).

Given the dominance of pharmaceutical interventions, and the funding for research on pharmaceutical interventions, do you think CO<sub>2</sub> therapies have a decent chance these days?

Can you imagine ways to educate the larger population on ways to temporarily increase their exposure to CO<sub>2</sub>, so that it is not only a therapy of more privileged groups with access to “alternative” health resources?

9. “People with anorexia or panic or obsessive-compulsive disorders consistently have low carbon dioxide levels and a much greater fear of holding their breath. To avoid another attack, they breathe far too much and eventually become hypersensitized to carbon dioxide and panic if they sense a rise in this gas. They are anxious because they’re overbreathing, overbreathing because they’re anxious.” (p. 177)

This quote points to one of the author’s points; that changing the way we breathe may have the power to improve psychological/mental states even more than SSRIs or psychological interventions. It is just that we have to work at it, and we have to pay attention.

Do you sense openness to this in any of your circles of friends, family, co-workers, etc? Resistance? A combination?

## Chapter Ten: Fast, Slow, and Not at All

1. Do you have any personal experience of prana, chi, ki, ruah, orenda? If so, how would you describe it?
  
2. a. When and where did the “yogic” breathing practices originate?  
  
b. Did they have any known relation to any religious or spiritual practices?
  
3. What are some of the things that Swami Rama was able to do - purposefully - with his system (body, mind, prana, etc.)?
  
4. Who was Albert Szent-Gyorgi? What was his professional background?
  
5. According to the research the theories of Albert Szent-Gyorgi, what are the relations between the “subtle energy that drives all life”, oxygen consumption, electron excitability, health, and normal/abnormal growth or cellular processes?
  
6. The follow thoughts combine the author’s perspective, my thoughts, and some themes from our first two book discussions:

We are all individuals who are raised, trained, & cultured with certain priorities.

We are exposed to certain thoughts and beliefs about the human system, to various systems of “healing”, medicine, and “fixing” problems.

Our dominant systems of medicine are good at acute fixes and emergency situations.

However, the practitioners of chemical medicine (often called “biomedicine” or allopathic medicine) does not seem to be equipped to heal most chronic poor health.

The “health insurance” system almost entirely supports chemical/bio/allopathic medicine.

It seems that we encounter preventative healing (e.g. Bikram Yoga, this book, etc.) based on who we know, situational luck, etc.

Do you have any creative ideas for getting these ideas out to more people, and perhaps even people who aren't part of your social or familial network?

## **(Bikram) Yoga Related Questions**

What potential processes / effects are we creating in the body via a Bikram Yoga practice, with respect to any of the following:

- oxygenating our cells
- electron excitability
- autonomic nervous system (parasympathetic/sympathetic)
- vagal system/vagus nerve
- autoimmune responses
- CO2 levels in the blood

- high/shallow breathing
- low/deep/abdominal breathing
- slow breathing
- nose breathing
- central chemoreceptors/environmental CO2 tolerance
- exposure therapies

## **Additional Resources**

<https://www.youtube.com/watch?v=vullsN32WaE>

- The Mathematics of Weight Loss (TedxQUT Ted Talk from 2013)
- (the huge percentage of fat that is exhaled may surprise you!)

<https://www.youtube.com/watch?v=4Lb5L-VEm34>

- Breathe to Heal (TedxCapeMay from 2015)
- With anxiety, stress, and sleep dysfunction skyrocketing around the globe, it's time we look at the unspoken reasons why. These debilitating challenges can be meaningfully impacted with ten to twenty minutes of breathing exercises per day. Max Strom, who has taught breath-work for 20 years, reveals his insights into the healing power of the breath.

[https://youtu.be/KIYD\\_NRGgcc](https://youtu.be/KIYD_NRGgcc)

- From the Breath FAQ section of the Breath website
- Interview with Patrick McKeown regarding nasal breathing, viral load, COVID-19, and much more!