

HOW'S YOUR BREATHING?

Is your breathing making you sick?
Is it triggering attention and learning deficits?
Is it bringing on unwanted emotions and feelings?
Is it reducing your performance and cognitive effectiveness?
Is it causing symptoms that you identify with stress and fatigue?
Is it causing or triggering unexplained physical and mental changes?

The way you have LEARNED to breathe may have
a much greater impact on you, than you might have ever imagined!

DID YOU KNOW?

Good breathing means proper allocation of carbon dioxide (CO₂).

Did you know that CO₂ is NOT poisonous? Did you know that CO₂ is good for you? Did you know that CO₂ is precious and essential to your health and performance? Did you know that you exhale only about 15% of the CO₂ entering the lungs (at rest)? Did you know that if you exhale too much CO₂ you may be in creating serious problems for yourself?

Proper allocation of CO₂ is about regulating acid-base physiology.

CO₂ regulates the *pH level* of extracellular body fluids, like blood and cerebrospinal fluid; *electrolyte balance*, like sodium and potassium; *blood flow*, like to the brain and to the heart; *kidney physiology*, like bicarbonate regeneration; and *delivery of oxygen and nitric oxide* (for vasodilation) by hemoglobin. CO₂ deficiency is known as *hypocapnia*.

CO₂ deficit can result in profound physical and mental changes.

Disturbing pH and electrolyte balance, by exhaling too much CO₂, may have immediate and long-term effects that trigger, exacerbate, perpetuate, and/or cause a wide variety of emotional (anxiety, anger), cognitive (attention, learning), behavioral (public speaking, test taking), and physical (pain, asthma) changes that may seriously impact your health and performance.

Learned *overbreathing* behavior leads to CO₂ deficiency, *hypocapnia*.

Breathing is a behavior subject to the same principles of learning as any other behavior, including the role of motivation, emotion, attention, perception, and memory. Tens of millions of Americans overbreathe, behavior that accounts for symptoms and deficits unexplained or falsely attributed to other factors.

Restore healthy CO₂ allocation through *CapnoLearning™*.

Restore good breathing behavior with the *CapnoTrainer®*, break-through technology for use in the field, while receiving live Internet-based learning sessions from a **Certified Breathing Practitioner**.

DO YOU OVERBREATHE?

Surveys suggest that up to 60 percent of all ambulance calls in major US cities may be a direct result of the symptoms triggered by overbreathing! For every person who shows up in emergency, how many more show up in physician's offices with unexplained symptoms? For every person who goes to see a physician, how many more simply go to work? And for everyone who reports a "medical symptom" how many more suffer with performance deficits?

Overbreathing means that too much CO₂ is being excreted, hypocapnia, which may seriously disturb acid-base balance, immediately and dramatically. Like any behavior, overbreathing can be learned, resulting in *behavioral hypocapnia*. Its effects on body chemistry may mediate "unexplained symptoms," misunderstood performance deficits, and acute and chronic "effects of stress," all of which may be falsely attributed to other causes.

Overbreathing is perhaps the best example of how a learned behavior regulates placebo (nocebo) effects, that is, how it can cause, trigger, exacerbate, and perpetuate symptoms and deficits of all kinds. These effects are real, not imagined, and may include:

- physical symptoms (e.g., asthma, fatigue, pain, hypertension),
- performance deficits (e.g., public speaking, test taking, carpal-tunnel),
- emotional reactivity (e.g., anger, anxiety, impatience),
- cognitive deficits (e.g., attention, learning, problem solving),
- psychological changes (e.g., personality shifts, self-esteem), and
- stress symptoms, immediate and long-term.

Some of the physiological changes include:

- reduced blood flow and volume in the brain (up to 50%)
- oxygen and glucose deficit in the brain
- alteration of hemoglobin chemistry
- reduced supply of nitric oxide (vasoconstriction)
- reduced coronary artery blood volume and flow
- bronchial constriction in the lungs
- smooth muscle constriction in the gut
- electrolyte imbalance, including sodium, potassium, and calcium
- buffer system compromises, bicarbonates
- muscle fatigue, weakness, spasm, and pain
- Increased excitability and metabolism of brain cells
- Intracellular (lactic) acidosis in brain and other cells

So which brain is yours? The picture on the front cover is an example of how dramatic the effect is on blood flow in the brain: the picture shows how one minute of moderate overbreathing reduced oxygen concentration by 40 percent! And, what effect could this loss of oxygen have on you?

SOME ACUTE (immediate) CHANGES

RESPIRATION: shortness of breath, breathlessness, feelings of suffocation
CHEST: tightness, pressure, pain, struggle with breathing
SKIN: sweaty, cold, tingling, and numbness
HEART: palpitations, irregularities, increased rate
EMOTION: anxiety, anger, panic, apprehension, worry, outburst, crying
STRESS: tenseness, fatigue, weakness, headache, hypertension
HEAD: dizziness, loss of balance, fainting, black-out, confusion, disorientation
SENSES: blurred vision, sound seems distant, reduced pain threshold
SELF: traumatic memories, low self-esteem, personality shifts
COGNITION: attention deficit, loss of focus, inability to think, poor memory
CONSCIOUSNESS: "other worldliness," disconnectedness, hallucinations
PERIPHERAL CHANGES: trembling, twitching, and shivering
MUSCLES: tetany, spasm, weakness, fatigue, and pain
ABDOMEN: nausea, cramping, and bloatedness.

DO ANY OF THESE DESCRIBE YOU?

Chest breathing?
Shoulders rising with each breath?
Shallow breathing?
Deep breathing?
Can't breathe deeply?
Short of breath?
Breathing rapidly?
Gasping or sighing?
Does your breathing seem irregular?
Breath holding? Are you manipulating your breathing?
Taking deep breaths while talking?
Not exhaling completely?
In a hurry to breathe?
Do you feel breathless?
Struggling with breath? Does it seem like work?
Are you "trying" to breathe? Is it intentional?
Worried about breathing? Afraid you can't get enough air?
Cold hands, numbness, tingling?
Light-headed, dizzy, blurred vision?
Disoriented, disconnected, confused, can't focus?
Chest tightness, pressure, or pain?
Mouth breathing?

If more than a few of the describe you, you may be suffering from the effects of hypocapnia. **Sign up for a breathing evaluation today.**

OUR SERVICES

We help people improve health and performance through the application of behavioral learning principles to breathing physiology.

Few people, lay or professional, know that (1) breathing directly regulates body chemistry, including pH, electrolyte balance, blood flow, hemoglobin chemistry, and kidney function, and that (2) breathing is a behavior subject to the same principles of learning as any other behavior, including the role of motivation, emotion, attention, perception, and memory. Bringing together these two simple facts means bringing together the biological and behavioral sciences in profoundly practical ways relevant to the lives of millions. It changes the way that we think about ourselves and our physiology.

Failure to directly address breathing as learned behavior, and how it regulates fundamental body chemistry, means leaving out the most fundamental, practical, and profound factors that account for (1) the far-reaching effects of bad breathing, as well as for (2) the surprising benefits of good breathing.

Unfortunately, misinformation, misconceptions, pseudoscience prescriptions, and ignorance about breathing prevent people from making good use of basic textbook knowledge. **We offer our clients the solution: comprehensive educational and consulting services for observing, evaluating, and learning breathing behavior.**

Our services are about **CapnoLearning™** which include: (1) evaluating breathing behavior, (2) examining the effects of breathing on physical symptoms, performance deficits, cognition, and emotion, (3) reinstating breathing reflexes based on their strategic role in the regulation of acid-base balance, and (4) learning breathing behavior that may enhance performance, prevent health problems, optimize mental capacity, and support embracing rather than defending lifestyles.

We accomplish these objectives through implementing basic principles of behavioral analysis, behavior modification, cognitive learning, CO₂ biofeedback, and awareness training in the context of self-discovery and self-regulation learning. Our **CapnoLearning™** services are about facilitating learning in the field, not about our administering expert services in the office, and include:

Breathing Interview: \$65.00

The breathing interview is a 25-minute telephone, or Skype, consultation based on a breathing checklist completed by you on the Internet. It is designed to help you determine whether or not you have a breathing-related problem.

Breathing Behavior Evaluation: \$150.00

This evaluation is a 50 minute comprehensive “live” study of your breathing behavior with the CapnoTrainer™. It includes continuous monitoring of your CO₂ levels and other breathing physiology, and a written evaluation report.

THE CapnoTrainer®

The **CapnoTrainer®** tells you about your own CO₂ allocation. Track real-time breathing behavior with **CapnoTrainer®** software on your own computer screen. Learn about how your breathing behavior affects you. Learn to engage healthy breathing.

Use a **CapnoTrainer®** at home or in the office while receiving live Internet-based (or in-person) learning sessions from a **Certified Breathing Practitioner**.

Learn with the CapnoTrainer, a breakthrough in technology that tells you about your own good and bad breathing behavior.

Based on our evaluations, we provide **CapnoLearning™** packages for clients, both locally and throughout the United States. We provide services both in person and on the Internet with Skype. These packages include learning sessions in combination with use of a **CapnoTrainer®**.

CapnoLearning Service Package 6: \$950.00

It includes use of the CapnoTrainer™ for one month along with 6 learning-consultation sessions over the Internet (or in person if preferred).

CapnoLearning Service Package 6E: \$1,100.00

This package is identical to the 6, but also includes the Breathing Evaluation.

CapnoLearning Package 8: \$1,600.00

It includes the CapnoTrainer® for two months and 8 learning sessions.

CapnoLearning Package 8E: \$1,750.00

This package is identical to the 8, but also includes the Breathing Evaluation.

Upgrade to Package 8: \$650.00

Package 6 may be upgraded to Package 8 at any time.

Post-Package Session: \$100.00 per session

Additional sessions may be booked on a session by session basis.

Session block 4: \$300.00 (\$75.00 per session)

Additional sessions may be purchased in blocks of four, at a reduced rate.

Personal Training Week: \$200.00

Continued personal learning with the CapnoTrainer®, after the completion of a package, may be extended on a week by week basis.

MAKE AN APPOINTMENT TODAY
at www.hypocapnia.org

Which Brain is Yours?



Overbreathing can trigger unexplained symptoms and deficits including changes in: attention, behavior, cognition, emotions, health, motor performance, perception, physical competence, even personality.



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