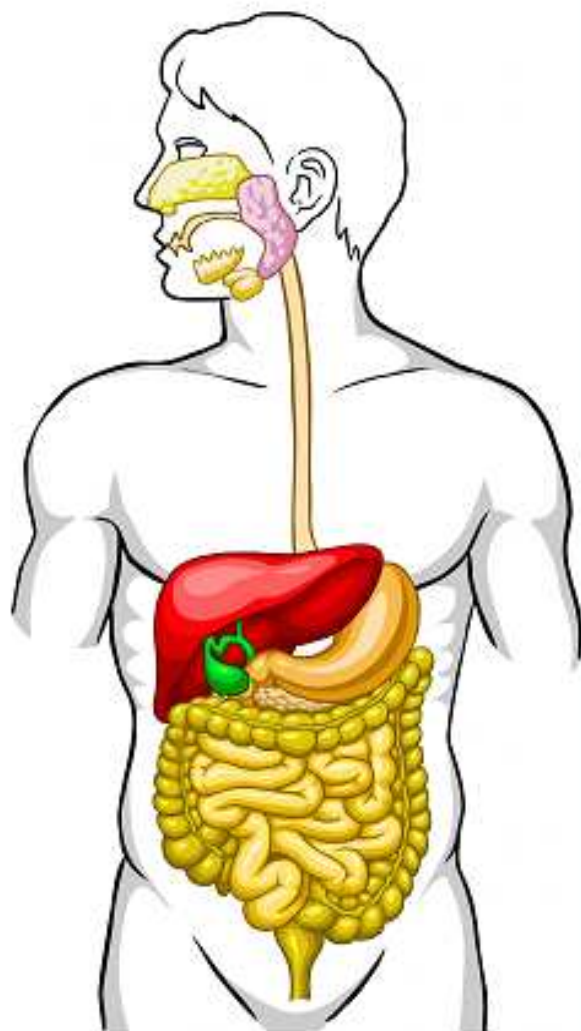


HOW TO IMPROVE DIGESTION WITH LIFESTYLE AND HIGHER BODY O₂



Artour Rakhimov

How to Improve Digestion with Lifestyle and Higher Body O₂

Artour Rakhimov (PhD)

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Introduction

Contemporary books and articles on digestion (including books written by doctors and nutritionists) are full of myths and fantasies about causes and solutions to digestive problems ranging from GERD (gastroesophageal reflux disease) and gallstones to IBS (irritable bowel syndrome), IBD (inflammatory bowel disease), pancreatitis, diverticulitis and many others.

As a result of popular treatment methods, people are mainly busy with endless changes in their diet and the daily use of probiotics and other supplements. These treatment programs are sometimes sprinkled with ideas of better chewing, more exercise and other lifestyle changes. Typical success rates for most methods are virtually never reported since they are usually much less than 50% in the short run. In the long run, since there are no criteria for normal or good digestion, many of the recovered people will get the same and sometimes other symptoms some weeks or months later.

There are simply no books and internet resources that provide even a list of specific signs of normal digestive health. These signs do exist, and they include such factors that are virtually never mentioned in the medical literature or sources related to alternative medicine. For example, a person with normal digestive health does not require any toilet paper due to the absence of soiling (i.e., no residue is left on the anus after a bowel movement). Also, bowel movements are regular, and the feces do not produce any odor and do not leave marks on the toilet bowl.

If someone has a GI problem (such as inflammatory bowel disease, irritable bowel syndrome, GERD, diverticulitis, pancreatitis, gallstones, dyspepsia or indigestion), they nearly always require use of toilet paper and the degree of soiling generally correlates with the severity of their digestive problem. Most ordinary people require toilet paper as well. This is an indicator of their poor GI health.

A person with normal digestion is able to hold up to 1 liter (4.2 cups) of urine in the urinary bladder, while modern sources do not even mention frequent urination with reduced urinary volume as one of the key symptoms of active digestive problems, such as Crohn's disease or ulcerative colitis. Frequent urination is also common for people with irritable bowel syndrome, indigestion, diverticulitis, and dyspepsia. (People with GERD or gallstones may not necessarily suffer from this symptom.)

Normal digestive health is also manifested in the absence of a tongue coating: scraping the tongue does not yield any white or yellow thick coating. Normal digestion means that there is no need to regularly or perpetually consume pounds of yogurt, probiotics, and/or any other fermented foods due to the continuous presence of good bacteria in the gut since the healthy immune system does not allow pathogens to reside on the surface of the gut and form biofilms.

All mentioned and other signs of good digestion relate to normalization of gut flora and the absence of pathological microbial films on the surface of the small intestine. This is

another key topic that is rarely discussed. Formation of biofilms by pathogens is the norm in cases of inflammatory bowel disease, Crohn's disease, and irritable bowel syndrome. Similarly, the presence of diverticulitis, pancreatitis, dyspepsia and indigestion also leads to formation of biofilms. These biofilms prevent absorption of nutrients and pollute the body with toxins.

Soiling has a very simple cause directly related to biofilms. In fact, soiling indicates a dominance of common pathogens in the gut, such as *Candida Albicans* and *H. Pylori*. In conditions of low body O₂, pathogens are able to survive and even thrive on the mucosal lining of the GI system. Biofilms are created by “sticky” pathogens, while good bacteria, which favor the absence of soiling, are unable to adhere to the surface of the gut. (The same sticky pathogens make one’s stool greasy and leave marks on the walls of the toilet bowl.)

When people improve their body-O₂ content up to the medical norm (40 seconds for the body-oxygen test), regardless of their initial health states and existing digestive problems, they naturally acquire these and other signs of good digestive health. However, with the application of various methods, even people with low or usual body-O₂ content (about 20-25 seconds are normal for modern people) are able to achieve the main signs of good digestion mentioned above (only tongue coating requires more efforts).

You can consume tons of super foods and supplements, observe the most stringent diets for years, practice yoga and many other techniques for many hours every day, but if your body-O₂ content remains unchanged, then the state of your immune system, blood flow and oxygenation of the GI organs, and overall health will also remain unchanged. If you increase your body O₂ up to 40 or more seconds, then you will naturally acquire the main signs of good (or normal) digestive health.

The main conditions addressed in this book are:

- inflammatory bowel disease, which includes:
 - * Crohn's disease
 - * ulcerative colitis.

These are the most stubborn and difficult-to-treat digestive problems. At the present moment, most people with Crohn’s disease require surgical intervention during their lifetime. There is no known cure for ulcerative colitis, and popular therapies may only reduce some symptoms of ulcerative colitis. This book focuses on these, most difficult conditions.

Once we know the method to defeat IBD, it is much easier to deal with other conditions, such as:

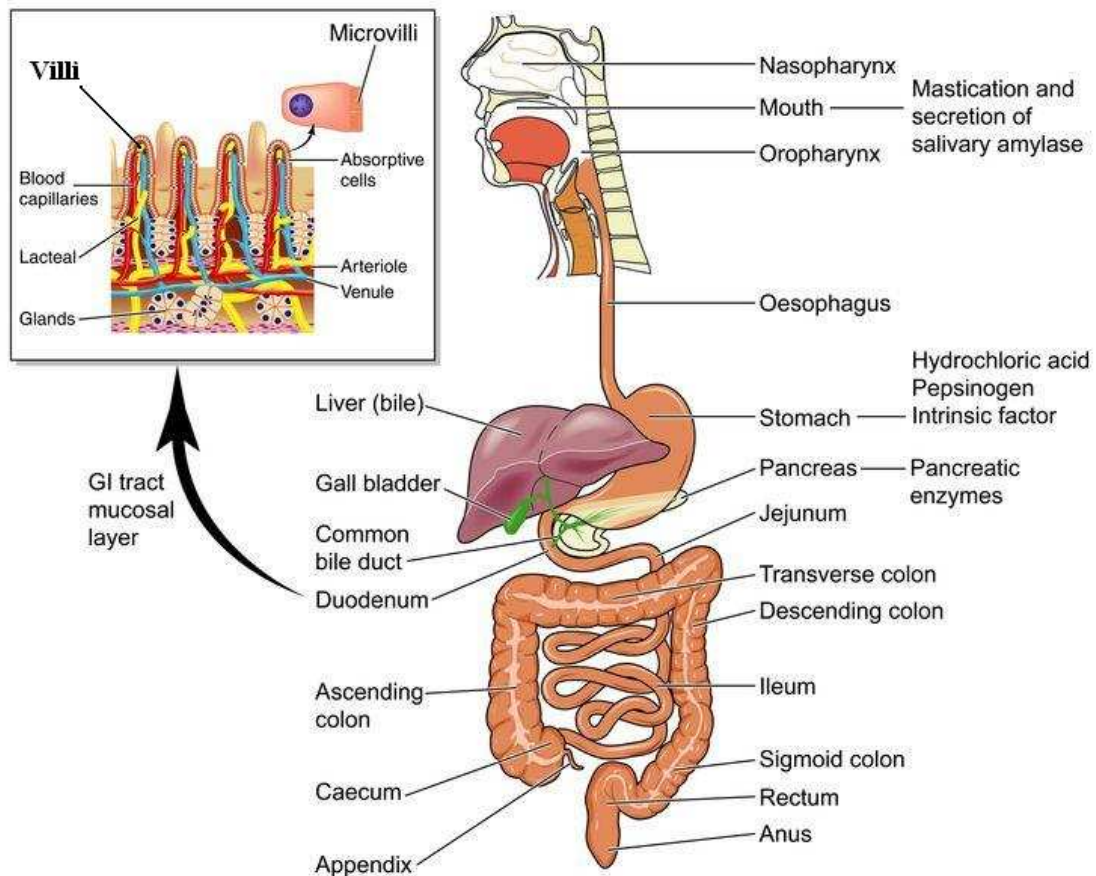
- irritable bowel syndrome
- GERD or gastroesophageal reflux disease
- gastritis
- diverticulitis
- pancreatitis

- gallstones
- dyspepsia or indigestion.

There are many more conditions and diseases that can be addressed and eliminated with the methods suggested in this book.

1. Good and poor digestive health

In this chapter, we are going to focus on general topics related to good digestive health, common symptoms of poor digestive health, causes of digestive problems in modern people, and expected effects of increased body oxygenation on digestive problems and restoration of normal digestive health.



1.1 Common symptoms of digestive problems

Common symptoms of GI problems are known and described in many books and other information sources. These symptoms can appear within hours after meals, or can even be triggered by other factors (that are discussed later). These GI symptoms include:

- *bloating*
- *belching*
- *flatulence*
- *diarrhea*
- *constipation*
- *fullness*
- *nausea*
- *rectal itching.*

There are many additional symptoms that are usually ignored by most doctors. However, these symptoms are important due to their intimate relationship with digestive health. This relates to such symptoms as tongue coating, frequent urination, constantly moist nose, ear buzzing, cold feet, unquenchable thirst, degree of soiling (how much toilet paper is required), changes in water color in the toilet bowl, shape and consistency of stool, and others.

Digestive symptoms that require medical attention

- *rectal bleeding*
- *anemia*
- *lack of appetite*
- *significant weight loss*
- *vomiting*
- *middle of the night abdominal pain and cramping.*

1.2 Signs of good digestive health (absence of digestive problems)

Normal digestive health can be described as the ability of the GI tract to produce digestive enzymes, efficiently absorb nutrients, prevent growth of pathogens, recycle useful nutrients and chemicals, and eliminate toxins and unwanted substances.

Good digestive health also can be identified by the presence of good GI flora in the gut with a prevalence of friendly bacteria and absence of biofilms. People with less than 30 seconds for the morning body-oxygen test (or more than 90% of modern people) usually naturally harbor pathogens in the gut. Abnormal GI flora is manifested in numerous signs, some of which are summarized in the Table below.

Parameter	Ideal GI health	Diarrhea	Constipation
Tongue coating	None	Thick, yellow or white	Thick, yellow or white
Transition time	24-48 hours	Less than 24 hours	More than 48 hours
Regularity of bowel movements	Yes	No	No
Shape of feces	Well-formed regular sausages	Flaky, greasy, and irregular	Hardened and dried in the front part and soft and greasy at the end
Water in the sink	Remains clean	Does not remain clean	May remain clean
Marks on the sink wall	None	Very likely	Possible
Residue on the anus ("soiling effect")	None	Yes	Yes
Toilet paper	Unnecessary	Required	Required
Gas	Little or odorless	Likely; offensive	Likely; offensive
Additional signs	None	Possible flatulence, belching, burping, GERD	Possible flatulence, belching, burping, GERD

Body-oxygen content is the key factor that defines the strength of the immune system and predetermines one's digestive health. When the body oxygenation in the morning is about 30-35 seconds or more, the immune system starts to successfully reject pathogens from the mucosal surfaces of the large and small intestines and other GI organs. This leads to rapid disappearance of digestive problems. Numerous positive changes indicate changes towards the ideal digestive health.

On the other hand, poor digestive health is manifested in various unpleasant symptoms and effects described in the Table above.

Due to the presence of inflamed villi and GI biofilms, many breathing students get stuck at about 20-25 s for the morning body-oxygen test even if they try to do more physical and breathing exercises. The key reason of their lowered CPs is biochemical stress due to inflammation and pathogens in the GI system. This abnormal state of the GI system can exist due to low body O₂ (less than 20 s) and/or due to harmful stimuli or triggers that leads to digestive flare-ups (or exacerbations). These triggers include hidden factors such as gluten or dairy products in diet, wrong types of physical exercise, wrong breathing exercises, and many others. There are in total several dozen adverse factors that are important to know and address in order to ensure GI recovery.

Without getting over 30 s for body oxygenation, it is very difficult or sometimes impossible to permanently solve many GI problems. However, chronic GI flare-ups drive the CP down to about 20-25 s or even smaller numbers. This leads to the formation of the

vicious circle that is impossible to break unless a person identifies all these factors and makes and carries out a comprehensive plan to address them.

Increased urination and reduced volumes of urine per toilet trip are additional signs of poor GI health. A healthy bladder can hold up to about 1 liter of urine. When there are large structural abnormalities in the large or small intestines (such as inflammation, tumors, diverticula, and so on), the person cannot hold more than 500 ml of urine and has more frequent trips to the washroom/toilet. During flare-ups or when digestive problems are more severe, this amount can drop down to as low as 200-300 ml or even less.

Increased frequency of urination and small urinary volumes can be signs of prostatitis, UTI (urinary tract infections) and some other health problems. However, for most people with digestive problems, which are originated in bowels, frequent urination is a symptom that indicates the presence and degree of abnormalities (e.g., inflammation).

When the small intestine is involved, apart from increased urination and soiling, it is common to experience additional symptoms such as:

- *ear buzzing*
- *cold feet*
- *unquenchable thirst after meals or due to other triggers*
- *constantly moist nose.*

Furthermore, these symptoms are also sensitive to and reflect one's current GI health. These symptoms will be discussed in more detail later.

Since most people have less than 25 seconds for the body-oxygen test, intestinal dysbiosis and the soiling effect (a need to use toilet paper) are very common, indicating poor digestive health. Virtually all people who get over 50 seconds for the body-oxygen test testify that they do not need toilet paper anymore (or some of them may say that they have very little soiling, but this can happen only due to insufficient chewing). As a result, the no-soiling effect appears naturally due to retraining of the automatic breathing pattern for people with high body-O₂ content.

1.3 Causes of digestive problems and poor GI health

Causes of poor digestive health are numerous. They are discussed throughout this book. We need to understand that there are differences between fundamental causes (such as low body-O₂ content) and triggers (or technical mistakes, such as eating foods that irritate the gut, insufficient chewing, and so forth).

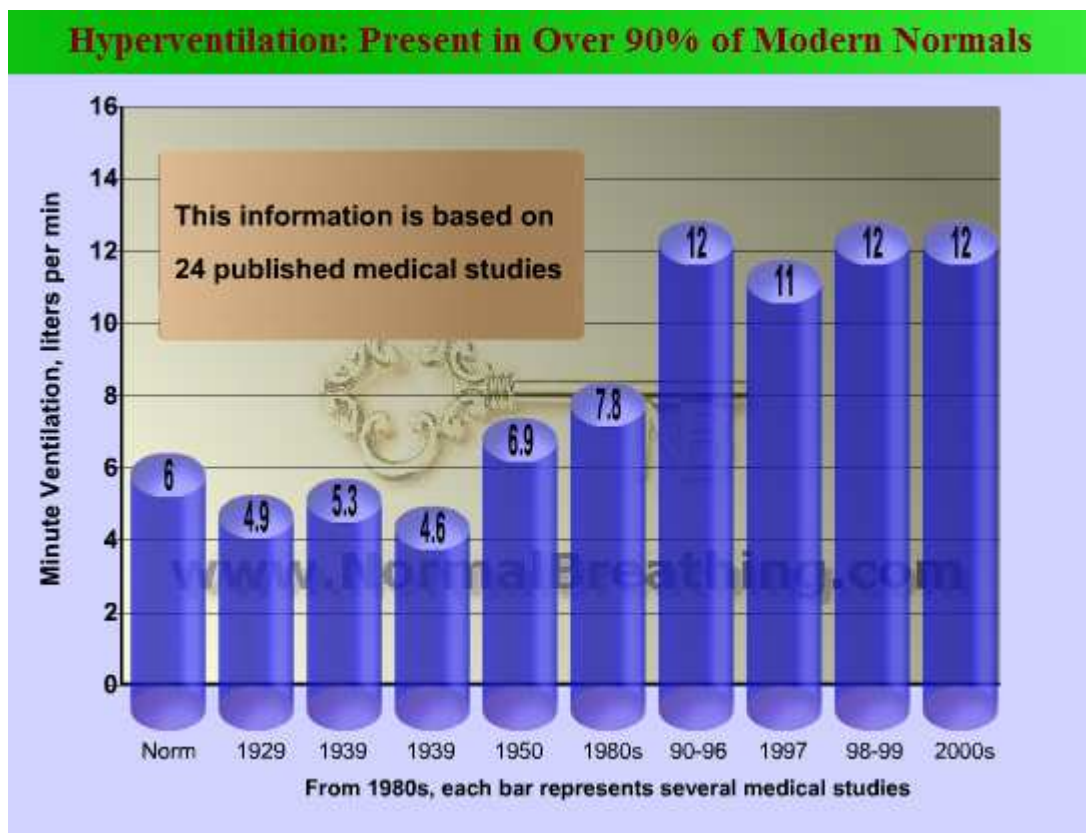
By fundamental causes I mean those primary physiological factors that make one's digestive recovery impossible. These factors include reduced blood flow (or perfusion) and oxygen supply to GI organs, and a suppressed state of the immune system. When the immune system functions normally and the GI organs have normal oxygenation and blood circulation, there are conditions for digestive recovery since the immune system will not allow the pathogens to form biofilms, which prevent absorption of nutrients and generate toxins that suppress the immune system and reduce body oxygenation. Normal

immunity also includes the ability of the body to eliminate abnormalities such as inflammation, tumors, diverticula, strictures and so forth.

Virtually each and every person with digestive problems has reduced body-O₂ content. The cause of reduced body-O₂ content and, therefore, the main cause of digestive problems is abnormal or ineffective automatic breathing. There are 3 fundamental causes of low body O₂: mouth breathing, chest breathing and chronic hyperventilation (the main cause that triggers 2 previous causes).

When blood flow to vital organs is below the norm and the body-O₂ content is reduced (below 20 seconds for the body-O₂ test described below), the immune system gets suppressed due to free radicals caused by cell hypoxia. This is the case, at least for early morning hours, for more than 90% of people. However, this was not the case with ordinary people living during the first half of the 20th century. They had up to about 30-40 seconds for the body-O₂ test, while the medical norm is about 40 seconds.

In order to prove these ideas related to poor health in modern people, let us consider medical evidence related to historical changes in breathing (minute ventilation).



Most people believe that more breathing provides more oxygen for cells, and that CO₂ is a toxic gas. However, hundreds of medical studies showed the following results that can be considered as fundamental laws of physiology and respiration.

1. When we breathe more than the medical norm (or hyperventilate), the oxygenation rate

of the red blood cells in the lungs remains about the same: 98-99%.

2. Hyperventilation (or breathing more than the medical norm) causes CO₂ deficiency (called “hypocapnia”) in the lungs, blood and other cells.
3. Since CO₂ is the most potent dilator of blood vessels (vasodilator), arterial hypocapnia reduces blood flow to all vital organs of the human body. Hypocapnia also results in the suppressed Bohr effect (or reduced release of oxygen in tissues).
4. As a result, hyperventilation causes reduced perfusion and tissue hypoxia in all vital organs including organs of the digestive system.
5. Tissue hypoxia leads to production of free radicals in cells due to anaerobic cellular respiration. This leads to suppression of the immune system.

Therefore, most contemporary people suffer from reduced blood flow, reduced body oxygenation, and a suppressed immune system. These are the fundamental causes of digestive problems. These causes explain the very low efficacy of common medical treatment (such as antibiotics and surgeries) and alternative health techniques used for digestive problems. All these findings were known to and outlined by the leading Soviet physiologist Dr. Konstantin Pavlovich Buteyko, who invented the Buteyko breathing method to deal with hyperventilation and restore normal breathing and normal body oxygenation.

In relation to GI problems, low CO₂ in the arterial blood leads to vasoconstriction and reduced blood flow to the digestive system compromising transfer of oxygen, glucose, digestive enzymes and many other vital nutrients. Low body oxygenation, due to immunosuppression, also allows attachment of pathogens to the mucosal surfaces of the digestive system: in the mouth, throat, stomach, large and small colons, rectum and anus. This leads to formation of biofilms that are very resistant even to medical drugs in people with less than 20 seconds for the body-O₂ test. Therefore, on a cell level, the cause of poor digestive health is low body-oxygen levels caused by hyperventilation.

Note that mouth breathing and chest breathing are additional causes of GI problems, since both these factors also reduce body oxygenation. However, both mouth breathing and chest breathing are caused by overbreathing. People with normal breathing naturally (without deliberate effort) have nasal diaphragmatic breathing during sleep and at rest (or for their unconscious breathing).

You can daily eat best supplements, drink canisters of herbal drinks, have hundreds of colonic irrigations, and practice yoga for hours every day, but if your body-oxygen level remains the same, you will likely suffer from the same symptoms and require the same dosage of medication. After applying any treatment that does not change your body O₂, your colitis, Candida, gastritis, GERD, or whatever GI problem you have, is likely to come back again (together with accompanying parasites and pathogens) until you increase your body oxygenation to at least 25-30 seconds.

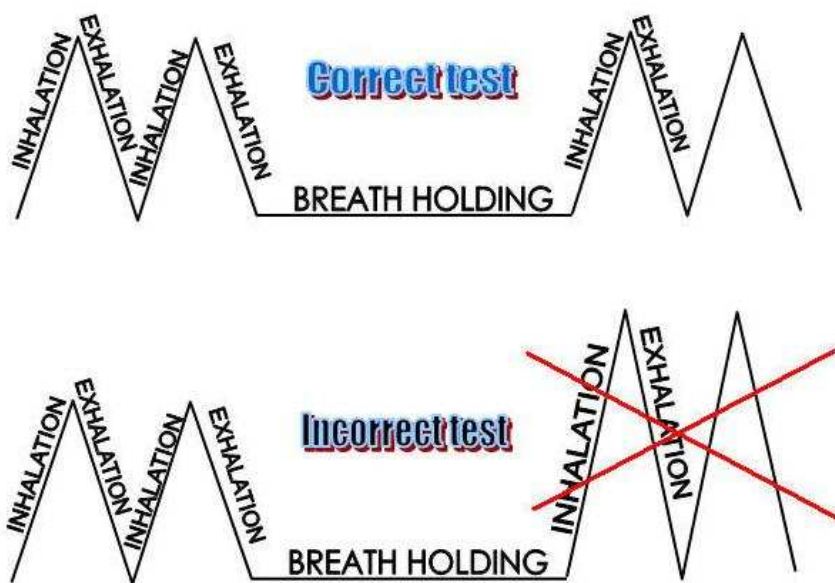
1.4 Body-oxygen test

The DIY body-O₂ test is the most fundamental and very accurate health test for more than 99% of people. Clinical experience of over 150 Soviet and Russian MDs showed

that this test is possibly the best ever-known health test. How to do this test?

Sit down and rest for 5-7 minutes. Completely relax all your muscles, including the breathing muscles. This relaxation produces a natural spontaneous exhalation (breathing out). Pinch your nose closed at the end of this natural (not deliberate) exhalation and count your breath holding time in seconds. Keep the nose pinched until you experience the first desire to breathe. Practice shows that this first desire appears together with an involuntary push of the diaphragm or swallowing movement in the throat. (Your body warns you, "Enough!") If you release the nose and start breathing at this time, you can resume your usual breathing pattern (in the same way as you were breathing prior to the test).

Do not extend breath holding too long trying to increase the result. You should not gasp for air or open your mouth when you release your nose. The test should be easy and not cause you any stress. This stress-free breath-holding time test should not interfere with your breathing, as shown here:



Warning. Some, not all, people with heart disease, migraine headaches, and panic attacks may experience negative symptoms minutes later after this light version of the test. If this happens, they should temporary avoid this test.

This body-O₂ test is also called the CP (control pause). This popular abbreviation will be used in the later parts of this book.

CP (control pause) = body-O₂ content = breath-holding time after usual exhalation and only until the very first signs of discomfort

What is known about usual CP norms and CPs of sick, normal and healthy people?

“If a person breath-holds after a normal exhalation, it takes about 40 seconds before breathing commences” From the textbook “Essentials of exercise physiology”, by McArdle W.D., Katch F.I., Katch V.L. (2nd edition), Lippincott, Williams and Wilkins, London 2000, p.252.

Results of Western medical and physiological research studies are summarized in these 2 Tables:

- Body-oxygen test in sick people (13 medical studies; less than 20 seconds)

Condition	Number of subjects	Body Oxygen or Control Pause, s	Reference
Hypertension	95	12 s	Ayman et al, 1939
Neurocirculatory asthenia	54	16 s	Friedman, 1945
Anxiety states	62	20 s	Mirsky et al, 1946
Class 1 heart patients	16	16 s	Kohn & Cutcher, 1970
Class 2-3 heart patients	53	13 s	Kohn & Cutcher, 1970
Pulmonary emphysema	3	8 s	Kohn & Cutcher, 1970
Functional heart disease	13	5 s	Kohn & Cutcher, 1970
Asymptomatic asthmatics	7	20 s	Davidson et al, 1974
Asthmatics with symptoms	13	11 s	Perez-Padilla et al, 1989
Panic attack	14	11 s	Zandbergen et al, 1992
Anxiety disorders	14	16 s	Zandbergen et al, 1992
Outpatients	25	17 s	Gay et al, 1994
Inpatients	25	10 s	Gay et al, 1994
COPD and congenital heart failure	7	8 s	Gay et al, 1994
12 heavy smokers	12	8 s	Gay et al, 1994
Panic disorder	23	16 s	Asmudson & Stein, 1994
Obstructive sleep apnea syndrome	30	20 s	Taskar et al, 1995
Successful lung transplantation	9	23 s	Flume et al, 1996
Successful heart transplantation	8	28 s	Flume et al, 1996
Outpatients with COPD	87	8 s	Marks et al, 1997
Asthma	55	14 s	Nannini et al, 2007

- Body-oxygen test in healthy people (24 references; about 20-30 seconds now; about 40-50 seconds 80-100 years ago)

Types of people investigated	Number of subjects	Control Pause, s	References
US aviators	319	41 s	Schneider, 1919
Fit instructors	22	46 s	Flack, 1920
Home defense pilots	24	49 s	Flack, 1920
British candidates	23	47 s	Flack, 1920
US candidates	7	45 s	Flack, 1920
Delivery pilots	27	39 s	Flack, 1920
Pilots trained for scouts	15	42 s	Flack, 1920
Min requir. for flying	$\frac{30}{100}$	34 s	Flack, 1920
Normal subjects	20	39 s	Schneider, 1930
Normal subjects	30	23 s	Friedman, 1945
Normal subjects	7	44 s	Ferris et al, 1946
Normal subjects	22	33 s	Mirsky et al, 1946
Aviation students	48	36 s	Karpovich, 1947
Normal subjects	80	28 s	Rodbard, 1947
Normal subjects	3	41 s	Stroud, 1959
Normal subjects	16	16 s	Kohn & Cutcher, 1970

Normal subjects	6	28 s	Davidson et al, 1974
Normal subjects	16	22 s	Stanley et al, 1975
Normal subjects	7	29 s	Gross et al, 1976
Normal subjects	6	36 s	Bartlett, 1977
Normal subjects	9	33 s	Mukhtar et al, 1986
Normal subjects	20	36 s	Morrissey et al, 1987
Normal subjects	14	25 s	Zandbergen et al, 1992
Normal subjects	26	21 s	Asmudson & Stein, 1994
Normal subjects	30	36 s	Taskar et al, 1995
Normal subjects	76	25 s	McNally & Eke, 1996
Normal subjects	8	32 s	Sasse et al, 1996
Normal subjects	10	38 s	Flume et al, 1996
Normal subjects	31	29 s	Marks et al, 1997
Normal males	36	29 s	Joshi et al, 1998
Normal females	33	23 s	Joshi et al, 1998
Healthy subjects	20	38 s	Morooka et al, 2000
Normal subjects	6	30 s	Bosco et al, 2004
Normal subjects	19	30 s	Mitrouska et al, 2007
Healthy subjects	14	34 s	Andersson et al, 2009

Doctor Buteyko and his medical colleagues (about 150 doctors) tested more than two hundred thousand Soviet and Russian patients and found that the following relationships generally hold true for the body-oxygen test:

1-10 s - severely sick, critically and terminally ill patients, often hospitalized

10-20 s - sick patients with numerous complaints and, often, on daily medication

20-30 s - people with average health and usually without serious chronic health problems

40-60 s - very good health

Over 60 s - ideal health, when many modern diseases are virtually impossible.

How does the body-oxygen test relate to your automatic breathing?

Medical evidence suggests that sick people are heavy breathers (you can find these research studies on the Homepage of NormalBreathing.com). Heavier breathing leads to reduced results for this body-oxygen test:

- If you have about 40 seconds for the body-oxygen test, you have normal breathing (with about 5-7 L/min for minute ventilation at rest).

- If your CP is 20 s, you breathe for 2 people or twice more than the medical norm.

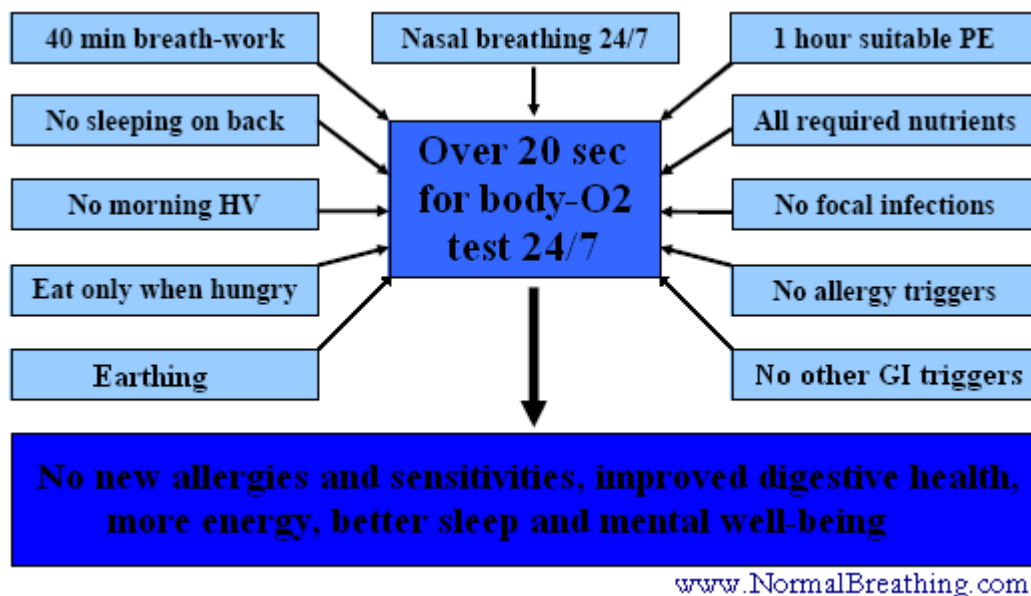
- If you have 10 s of oxygen in the body or less, you breathe for at least 4 people.

Hence, if you learn how to breathe slower and less (in regard to your automatic or unconscious breathing), you will naturally increase your body-oxygen levels. It is very difficult, and in many cases nearly impossible, to improve or solve digestive problems without increased body oxygenation.

1.5 Restoration of digestive health: the main goals

Nearly all people with serious digestive problems have less than 20 seconds for the body-oxygen test.

Their digestive problems would be less severe, when they achieve more than 20 seconds for body O₂ and maintain the CP at this level 24/7. This is a crucial initial step to achieve significant improvements in GI health. Here is a Chart that describes the main requirements and expected effects.



Explanations and notes for this Chart.

A **40 min breath-work program** can include 2 breathing sessions each 20 min long, or 3 sessions about 13-14 min long, or 4 sessions at 10 min each. People with some GI problems need to follow special guidelines in relation to breathing exercises.

Among other fundamental steps are **Prevention of breathing through the mouth** and **Prevention of sleeping on one's back**. There are 2 special manuals that can be used, if relevant: the Manual "How to prevent sleeping on one's back" and the Manual "How to maintain nasal breathing 24/7". They are both provided on the main site (NormalBreathing.com).

No morning HV means no morning hyperventilation (i.e., the CP drop throughout the night should be no more than 5 seconds, preferably less than 3 s). You have to solve all sleep-related problems that cause your overnight CP drop.

1 hour suitable PE means 1 hour of total Physical Exercise every day with strictly nasal breathing (in and out) all the time. Usually, less than 20 seconds for the current CP indicates feeling tired and an inability to do running, jogging, or any other rigorous exercise with strictly nasal breathing. However, for most people with GI problems and less than 20 s CP, walking with nose breathing is possible. Moreover, with further CP increase, students feel empowered and surprised by energy and skills previously hidden in their sick bodies.

All required nutrients are discussed later in this book. The most common deficiencies include fish oil, calcium, magnesium, zinc, and protein. Some other nutritional deficiencies can also slow down or even halt breathing retraining. Mild cortisol deficiency and existing GI inflammation can also be corrected using a special program related to Earthing and described in this book.

“Eat only when hungry” is the central common sense rule developed by Dr. Buteyko in relation to meals. This rule is particularly important for people with GI problems. It also means that you should stop eating at the first sign of satiety.

No focal infections requires your analysis of certain health conditions that can not be solved using breathing retraining. Breathing retraining is successful against heart disease, asthma, diabetes and even cancer. However, if you have large intestinal parasites (worms), depending on the toxic load, your current CP will be restricted to about 20-35 seconds. The focal infections are able to slow down your GI recovery (for low CP numbers) or even prevent it entirely (when you achieve about 20-35 s CP). There is a separate chapter in this book devoted to focal infections. Focal infections include:

1. Large intestinal parasites (roundworms, flatworms, hookworms, liver flukes, etc.)
2. Dental cavities (caries or pathogenic anaerobes in teeth)
3. Dead tonsils (degenerated tonsils that do not have blood supply and harbor pathogenic bacteria)
4. Feet mycosis (or athlete’s foot).

Sometimes, the presence of root canals or mercury amalgams can become the main issue that requires attention (i.e., removal) for higher CP and better health.

No allergy triggers and **No other GI triggers** involve avoidance of any triggers of your allergic reactions and flare-ups. These triggers can include:

- air-borne dust mites, cat and dog proteins, mold, pollen, paper ink, cigarette and tobacco smoke (including secondhand smoke), toxic air borne chemicals, pollutants, and fumes
 - digested gluten products, dairy products, peanuts, tomatoes, and many other foods and substances
 - tap water or other consumed liquids with chemical triggers that are present in them
 - substances and objects that can produce an allergic response due to skin contact (synthetic clothes, tiny residues of detergents on fabrics, paints, metals, plastics, etc.)
 - electromagnetic and other penetrating radiation
 - mechanical pressure on abdominal organs due to bending, body twisting, and so on.
- These and other examples are considered below.

Regular allergic inflammatory response exhausts cortisol reserves, promotes pathogens in the gut, and suppresses the immune system, making breathing normalization very difficult or even impossible.

Earthing (electrical grounding of the human body) is considered in more detail below.

The main next target: over 30-35 s CP

With over 30 seconds the immune system starts to deal with pathogens and biofilms, dramatically improving the GI symptoms described above. Many GI problems gradually disappear if the person maintains over 30 s CP 24/7.

However, complete elimination of inflammation and restoration of structural integrity of the gut for virtually all GI problems can be achieved with about 35-40 seconds for body O₂ 24/7.

The next practical observation is that digestive flare-ups cause a variety of problems that lead to reduced body O₂ with usually less than 25 s for the body-O₂ test. It follows from this observation that getting higher body-O₂ numbers requires **avoidance of triggers and allergic reactions** that causes flare-ups. In other words, one cannot normalize breathing, body O₂ and health without addressing his or her GI issues.

When teaching breathing retraining to hundreds of students, it was noticed that, for many people, restoration of digestive health (with no soiling effect) is a "side effect" of breathing normalization. They gradually see disappearance of main symptoms and greatly improved or completely normalized digestive health.

However, an increasing number of breathing students worldwide experience serious digestive problems that can not be solved using the standard program of breathing retraining due to negative effects of numerous triggers that cause digestive flare-ups. Such people get stuck at about 20-25 seconds for the body-oxygen test for many months or even years.

Digestive exacerbations or flare-ups create numerous negative effects:

- advance of pathogens and increased toxic load
- formation of GI biofilms in the small intestine
- reduced absorption of nutrients
- worsened inflammation in the gut
- reduced cortisol reserves and general stress
- worsened hormonal profile, leading to fatigue, more problems with sleep, and various psychological and emotional problems
- suppression of the immune system
- possible development of multiple allergies due to immunosuppression.

Therefore, the suggested solution to the GI problems is to address 2 factors at the same time:

- increase body-O₂ content using known breathing techniques such as the Buteyko method, combined Frolov-Buteyko therapy, or the Amazing DIY breathing device.
- avoid all triggers and modify lifestyle so as to create conditions for health recovery.

1.6 Expected effects of breathing retraining on common GI problems

Listed below are clinical findings of Russian doctors (my experience with my students confirms their observations) about effects of better body oxygenation and breathing exercises on common GI problems.

● Chronic gastritis

- *Immediate decrease and, later, complete elimination of pain and symptoms due to dyspeptic effects (heartburn, regurgitation, nausea, etc.).*
- *Increase in the CP is accompanied by normalization of colonic tone, phasic contractility of the GI tract, perfusion, metabolic processes in the mucosal surface of the esophagus and stomach, causing accelerated healing of erosions and ulcers, together with regeneration of the mucosal surface of the stomach.*
- *When the student achieves 35 s for the morning CP and maintains this level for more than 2 weeks, normalization of the immune profile leads to eradication of *Helicobacter Pylori*.*
- *Prevention of complications due to chronic gastritis, and complete clinical remission for many years.*
- *Significant improvements in the quality of life.*

● Chronic non-ulcerative colitis

- *Immediate decrease and, later, complete elimination of pain and symptoms due to dyspeptic effects (bloating and rumbling in the belly, regurgitation, nausea, inconsistencies in bowel habits, etc.).*
- *Increase in the CP is accompanied by normalization of colonic tone, phasic contractility of the GI tract, perfusion, and metabolic processes in the mucosal surface, leading to its regeneration.*
- *When the student achieves 40 s CP or more and maintains this level for more than 2 weeks, normalization of the immune profile leads to normalization of the GI flora with elimination of pathogenic bacteria and inflammation in the lining of the large intestine.*
- *Prevention of complications.*
- *Complete clinical remission for many years (cure).*
- *Significant improvements in the quality of life.*

● Chronic pancreatitis

- *Immediate decrease and, later, complete elimination of pain and symptoms due to dyspeptic effects (bloating and rumbling in the belly, regurgitation, nausea, vomiting, alternating bowel habits, etc.).*
- *Increase in the CP is accompanied by normalized colonic tone, phasic contractility of the GI tract and recovered internal secretion.*
- *Prevention of complications (diabetes mellitus, pancreonecrosis, secondary diseases of the biliary tract, etc.).*
- *Complete clinical remission for many years (cure).*
- *Significant improvements in the quality of life.*

- **Chronic cholecystitis**

- Immediate decrease and, later, complete elimination of pain and symptoms due to dyspeptic effects (bloating and rumbling in the belly, regurgitation, nausea, vomiting, alternating bowel habits, etc.).
- Increase in the CP is accompanied by normalization of colonic tone, phasic contractility of the GI tract, perfusion, metabolism in the lining of the intestine, tone of the bile-conducting organs and elimination of inflammatory processes in the bile-conducting system.
- When the student achieves 35 s morning CP and maintains this level for more than 2 weeks, normalization of the immune profile leads to normalization of the GI flora, disappearance of pathogenic bacteria and elimination of inflammation in the biliary tract.
- Prevention of complications.
- Inhibition of formation of stones in the gallbladder.
- Complete clinical remission for many years (cure).
- Normalization of the emotional life of the students and significant improvement in the quality of life.

- **Gastro-esophageal reflux (GERD)**

- Immediate decrease and, later, complete elimination of pain and symptoms due to dyspeptic effects (heartburn and regurgitation).
- Increase in the CP is accompanied by improved perfusion and normalization of the metabolic processes in the mucosal surface of the esophagus and stomach, with accelerated healing of erosions and ulcers.
- When the student achieves 35 s morning CP and maintains this level for more than 2 weeks, normalization of the immune profile leads to normalization of the GI flora, disappearance of pathogenic bacteria and elimination of inflammation in the esophagus and stomach.
- Prevention of recurring appearances of erosions and ulcers.
- Normalization of the emotional life and significant improvement in the quality of life.

From these typical results, one can infer the similar expected effects for many other GI conditions, such as:

- **inflammatory bowel disease (Crohn's disease and ulcerative colitis)**
- **irritable bowel syndrome**
- **diverticulitis**
- **dyspepsia.**

If an average breathing student with, for example, asthma or hypertension, requires a certain amount of work in order to achieve a certain CP level and corresponding health recovery (with no symptoms are present, and no medication are required), then a student with additional digestive problems often requires at least 2-5 times more effort in order to achieve the same result. This relates to dietary changes, lifestyle changes, breathing exercises, and some other adjustments. It also takes much more effort for a breathing practitioner to restore the health of a student who, in addition to his or her low CP, has serious digestive problems.

A small number of students with GI problems are able to progress smoothly to higher morning CPs (about 30-35 seconds), and their digestive problems cause only a minimum impact on their health recovery. Many breathing-retraining students are slowed down (up to 2 times or more) since they need to learn from mistakes they make. In more serious cases, some breathing students get stuck for months or years (usually with about 15-25 s for the morning CP) due to problems with identifying and addressing all hidden GI factors that prevent their CP growth.

Obviously, our goal is to pinpoint all these adverse factors and empower the person with practical tools to restore their digestive system to its original state as it was designed by Nature.

2. Common triggers of digestive problems

2.1 Allergies

If a person is exposed to any allergic trigger every day and if this trigger creates inflammation in the GI tract, then this person will very likely have less than 30 seconds for the morning CP (most likely less than 25 seconds). An allergic reaction works similar to a focal infection. The final results are: generation of free radicals, advance of pathogens, reduced cortisol reserves, suppression of the immune system, heavier breathing, a lower CP, increased heart rate, and many others.

While there are many allergy tests, one of the best choices is allergy skin prick testing.



A microscopic amount of an allergen is introduced to a patient's skin, usually with a needle or pin, containing a small amount of the allergen. It is also called a “scratch test”. A single test can include up to 30-40 different substances to be injected under the skin.

After injection of a solution of food or other substance, there are several minutes of waiting time. In cases of allergic reaction, the area around the pricked place becomes swollen and inflamed. The diameter of the inflamed area (which is visible as an inflamed and swollen dome-shaped area) reflects the degree of the reaction. Usually this inflamed area is from 1 to 5 mm in size. It is assumed that the same effects (inflammation and swelling) take place in the GI tract.

Medical professionals are not yet aware about the finding that the results for this prick test, as for any inflammatory reaction, depend on the electrical voltage of the person or presence of grounding (Earthing). When the body is grounded (or electrically connected

to the Earth), many allergic reactions do not take place, and even existing inflammation is dramatically reduced. (Surgeons do know about importance of grounding, and all major surgeries are done on grounded patients.)

That means that an insulated person can be positively tested for some food allergy to, for example, oranges or tomatoes. This person can indeed be allergic to oranges or tomatoes but only when he or she is insulated from the Earth and has a positive body charge. It is possible that in conditions of grounding (or while having the same negative voltage as the Earth), this person can safely eat oranges or tomatoes.

Medical professionals also use blood tests for allergies. These tests are more expensive, limited to only one substance (per test), and suffer from the same problem related to the effects of grounding.

Some alternative health practitioners use muscular kinesiology and muscle testing to find allergies. These tests are even less reliable due to additional factors related to unconscious beliefs and psychological denial.

Note that if you have serious digestive problems and have been complaining about these problems to your health care provider for some months, it is very likely that your doctor will either suggest or agree with your request to conduct an allergy prick test. This test is valuable and provides you with practical knowledge related to your immune reactions.

Most common food allergies

There are no exact numbers, but approximate results provided by medical professionals suggest the following. In conditions of electrical insulation, from 50% up to 90% of all severe allergic reactions to foods are caused by:

- milk
- wheat
- eggs
- peanuts
- tree nuts
- soy
- fish
- shellfish.

Most common allergy triggers

There are other allergy triggers that usually affect the respiratory system or skin. Nearly any of these allergens can cause serious GI distress, especially in conditions of electrical insulation:

- pollens
- animal hair
- dust mites and dust mite droppings
- insect bites
- mold
- latex

- medical drugs
- perfume
- secondhand smoke
- proteins from feces of cockroaches.

Usually these allergy triggers affect the respiratory system and/or may cause symptoms of hay fever. However, even though this may look unusual, there are thousands of people who can get GI flare-up and inflammation due to dust mites, perfumes and other triggers.

There are also individuals who experience serious GI exacerbations due to their exposure to, for example, ordinary laundry detergents used to wash their clothes that they wears 24/7. These people can experience constant (hidden) allergic reactions and suffer from digestive problems for years. Other factors may look like triggers. In reality, they may play only a secondary role.

For a person who spends most of his time indoors, chemicals that are used to wash floors or dishes can be triggers. Here are again we have a situation with a hidden, constantly present trigger.

When electrically insulated people wear synthetic fabrics on their skin, these fabrics extract electrons and dramatically increase body voltage to hundreds or even thousands of volts (creating a positive charge) due to triboelectricity. This positive electrical potential dramatically worsens the inflammatory response.

Note that grounding (or Earthing) is a very new health area. Electrons are able to act as antioxidants to eliminate the destructive effects of reactive-oxygen and reactive-nitrogen species on healthy cells. However, it is possible, that the immune reaction itself (or the chain of multiple events that is involved in the immune response) also depends on grounding.

Therefore, it is smart to get grounded, ideally, nearly all the time, or, at least, when you expect possible allergic triggers or have meals and while you digest them.

If you identified an allergy trigger, you need to follow the most important rule related to your GI recovery:

Rule # 1. Any allergy trigger that causes digestive problems or flare-ups should be avoided.



2.2 Chemical triggers present in food and water

Depending on the location and types of existing damage in the GI tract, various chemicals and substances can irritate the inflamed mucosal lining and villi. The effects of irritating chemicals are easier to consider using examples.

Example 1. Raw garlic, raw onions, and other spices

If a person with gastritis eats raw garlic, he or she may notice much more burping some 1-3 hours after the meal. This gas is due to powerful chemicals present in raw garlic. For people with healthy guts, raw garlic is an excellent food. In fact, it is one of the best foods to suppress and destroy Candida yeast infection, and many other parasites often residing in the GI tract. However, the presence of damage and existing inflammation makes mucosal surfaces too weak to resist the strong chemical effects of raw garlic, which destroys mucosal cells in the stomach (and inflamed villi in the small intestine), causing more inflammation, possible thirst (due to swelling of the stomach and colon), and worsened body-O₂ content and health.

The same effect can take place in people with damaged GI organs due to eating onions and many other spices, such as black pepper, hot chili pepper, cloves, ginger, and so forth.



However, when garlic and onions are cooked, the same person with gastritis may not experience any adverse symptoms. Even in cooked form (when enzymes and some other useful chemicals are destroyed due to high temperatures), onions and garlic are still able to fight pathogens in the gut since these foods provide inulin, a type of fiber that is not digested, but becomes food for probiotics or beneficial bacteria that should dominate the healthy gut. Note that some other spices (such as ginger or black pepper) create GI distress even after very long cooking.

Someone else, who has IBS, colitis or Crohn's disease, can also experience the same negative effects of raw garlic or raw onions. The main negative symptoms are likely to appear about 1-4 hours later after the meal.

Example 2. Oranges and other citrus fruits

Here is another example of a chemical trigger. When a person with an irritable bowel syndrome (or Crohn's disease) eats oranges, he or she may notice some adverse effects about 2-4 hours later. These effects can include thirst, flatulence, sleepiness, nausea, mental fog, and some others.

Oranges can be an allergy trigger for the immune system. At the same time, there are other chemicals that are present in oranges that may not cause any allergic reaction, but produce chemical damage to the inflamed lining of the GI tract. What are these chemicals?

When the small intestine is inflamed, acids are able to damage its villi. This relates to citric acid and ascorbic (vitamin C) acid present in oranges and other citrus fruits. Both these acids are generally beneficial for our health. Ascorbic acid is even known as an essential nutrient. However, the inflamed areas of the gut are not able to defend themselves from any of these acids. Even 10 or 50 mg of vitamin C (50 mg is a daily RDA dose) can be sufficient to trigger a digestive flare-up with negative symptoms.

Note that the prick test for oranges and other citrus fruits can be negative (with no allergy

triggers). However, any time when citrus fruits are consumed, there can be a negative reaction. Obviously, if a person with such an adverse reaction consumes citrus fruits every day, he or she will not be able to restore the gut.

There is an additional negative factor in most citrus fruits: fructose. People with digestive problems often have *Candida Albicans* residing in their duodenum (the first part of the small intestine). *Candida* yeast consumes simple sugars (like those present in nearly all fruits) causing sleepiness, nausea, mood swings and mental fog. When the CP is less than 10 s, *Candida* can become systemic due to inability of the immune system to resist pathogens even in the blood.



Among all citrus fruits, lemons and limes are safest in relation to *Candida*, but, as explained above, even lemons and limes can cause adverse effects due to their acids. (The effects of acids can be neutralized with baking soda as we are going to consider below.)

Example 3. Essential oils

Another large group of obnoxious chemicals (but only when the structural integrity of the gut is compromised) includes essential oils. Not all people with digestive problems are sensitive to essential oils. However, in many cases, the problem is that tiny amounts of essential oils cause chronic irritation and inflammation, while these minuscule amounts of essential oils can be hidden in, for example, a tooth paste or chewing gum that can be used on a daily basis.

Since most people brush their teeth about 2-3 times every day, just this single procedure (tooth-brushing with a tooth paste that contains essential oils) makes digestive recovery for people with, for example, IBD impossible. Most tooth pastes have peppermint, mint, menthol or some other essential oils.



Essential oils are beneficial in diets of people with a normal gut due to the powerful abilities of essential oils to fight pathogens. However, for many people with GI problems, essential oils destroy damaged villi and cause exacerbations of symptoms. If you suspect or are certain about such an adverse reaction to essential oils, get a toothpaste without essential oils such as a toothpaste used for babies or children, and use it until your gut is restored to a better state. Some tooth-whitening pastes are free from essential oils.

The adverse reactions to above-mentioned and some other chemicals are not present in all people with digestive problems. These negative reactions are more common in cases of serious GI problems or severe damage to the stomach or the small or large colon.

If the same person with severe GI problems partially recovers his or her GI health (in an ideal scenario, 1-2 days are enough to achieve the first positive changes), the same person can have much better chances to avoid any negative reactions from the same chemicals due to the improved gut state.

How to reduce or eliminate adverse effects of offensive chemicals

There are 2 useful tips that can either reduce or even completely eliminate the adverse effects of some chemicals.

Tip 1.

Start a meal with some friendly food that can coat the lining of the stomach and the small intestine with a layer that will later prevent the chemical attack of spices and other chemicals. Often, people start their meals with eating spices and other offensive foods first. This causes an immediate chemical attack on the lining of the GI tract. In the suggested scenario, when a person eats some neutral or friendly foods first, the adverse reaction will be either greatly reduced or altogether avoided.

Tip 2.

Acidic substances, such as citric acid and ascorbic acid (vitamin C) can be buffered with baking soda (sodium bicarbonate). You can purchase buffered vitamin C and citric ions

in forms of neutral salts. Or you can do it yourself. How to neutralize acids? You will need about a quarter or half of tea spoon of baking soda to neutralize acids in juice from a medium-size lemon. Or you can crush a tablet of vitamin C with a metal spoon in a small cup with water and add about a double volume of baking soda. If you use vitamin C powder (which becomes more common in health food stores and pharmacies), just add it to water, then add about an equal amount of baking soda, and mix them well. The chemical reaction between them (acids and baking soda) lead to formation of carbon dioxide in a form of bubbles or even foam as when you open a bottle or sparkling water or a soda pop.

Note that common or cheap brands of baking soda can be heavily processed and can have aluminum (the same as in table salt). Therefore, you need to find those types of baking soda that claim absence of aluminum (“aluminum-free” or “no aluminum” baking soda). Sometimes a good brand of baking soda can have a label “organic baking soda”.

If you take calcium and/or magnesium supplements, it would be a wise step to get magnesium citrate and calcium citrate, which are becoming more common in the USA, Canada, the UK, and other countries. (You can easily find them online as well.) Neutral citric-acid salts usually do not cause any negative reactions even for people with the most severe GI problems.

If we compare the effects of citric and ascorbic acids, ascorbic acid has a stronger negative effect on the inflamed gut. In cases of flare-ups and severe inflammation, even buffered vitamin C (such as sodium ascorbate or calcium ascorbate) can still cause a negative reaction. However, if the same person makes no mistakes and eliminates the biofilms (this may require only 1-2 days), he or she can use buffered ascorbic and citric acids with no adverse effects. Then consumption of buffered vitamin C will be very beneficial to further detoxify the gut.

As we can observe in these examples, a given food or substance can be either beneficial (in cases of good GI health) or destructive (for people with GI problems). The same is true for many activities and lifestyle factors (to be discussed in the next section).

It is also possible to be sensitive to ordinary tap water and conventional foods (or non-organic foods), which usually contain miniscule amounts of various chemicals that can irritate the gut. This topic will be discussed in more detail later in this book.

With the right program of gut restoration, within a few days, the person should be able to re-introduce many previously-destructive substances, chemicals, foods, and activities into his or her diet and lifestyle since they are often useful to speed up the recovery.

2.3 Mechanical triggers

Mechanical pressure on the abdominal area

When some part of the lower gut (located after the stomach) is already inflamed or has an ulcer, or diverticula, or stricture, bending yourself, doing body twisting, and performing

other activities that create an additional mechanical pressure on the abdomen and the colon can cause an immediate flare-up (with intensive peristaltic waves leading to swelling of the gut due to additional inflammation, causing possible thirst, flatulence, ear buzzing, and other nearly immediate symptoms). Sometimes, the GI problems can be so severe that a person can have a hard time to tie his or her own shoe laces without creating this GI distress.



Sleeping in a fetal position can easily cause the same negative effect. In some serious cases, even pressure due to sleeping on a stomach or sides is sufficient to trigger an immediate (usually additional to previous ones) flare-up. With the right behavior this situation can be quickly corrected (within days). More details are provided separately in a section devoted to sleep postures.

Slouching or poor posture is another culprit that is not easy to notice. You need to pay attention to such situations and activities, and possibly be careful with bending forward, side twists and all other activities that can immediately trigger a flare-up.

Some people with digestive problems are able to notice these negative effects. However, sometimes the symptoms are vague and difficult to spot. This often happens in cases with multiple daily triggers that lead to the chronically inflamed and irritable state of the gut.

Pressure on the gut from abdominal muscles

A similar negative effect can take place due to contraction of abdominal muscles. Many activities (such as grating carrots, tooth brushing, physical exercises for training abs, and so forth) can cause an immediate flare-up as well. In some people even scratching some itchy body part causes the same effect.

Therefore, a person with serious GI problems should keep an eye on effects of significant (or repetitive) activities with involvement of the main abdominal muscles: transverse abdominal, the internal obliques, the external obliques, and rectus abdominis.

Shaking of the body and the effects of mechanical vibrations

Other mechanical triggers of flare-ups include those situations that are accompanied by intensive mechanical vibrations of the body as during jumping or running. When one has a duodenal or gastric ulcer, intensive vibrations that are transmitted to internal organs can make the lesion or ulcer open due to its low mechanical strength. There are similar dangers when structural integrity of other GI organs is compromised due to tumors, diverticula, hernias, and other abnormalities.

Generally, shaking and vibration of the body are beneficial for human health due to positive effects on metabolism, lymphatic drainage, and increased strength of bones and other body parts and tissues. Dr. K. P. Buteyko was among first physiologists who suggested this idea. The body gets healthier and stronger due to its adaptation to mechanical stress. However, when the body is already damaged, mechanical vibrations can have a serious destructive power.

Apart from running and jogging, what are other possible examples with intensive body vibrations? Grating carrots or rigorous mechanical body shaking due to brushing teeth can trigger a flare-up. (Here we can see that tooth-brushing can have 3 independent triggers: essential oils, contraction of abdominal muscles and body vibrations, all of which can trigger a flare-up.)

It is known that falling down or being in car accidents cause more serious problems to people who already have damaged or weak body organs. The negative effects of such accidents are more common in elderly people, who often have worse GI health, structural GI abnormalities and reduced mechanical strength of GI organs.

Running or jumping can cause the lesions of the ulcer to open. The same activities can produce other types of damage to already injured digestive organs. Sometimes, even ordinary walking can lead to adverse symptoms.

In most-severe cases, there are individuals who can not stand up (after sitting) without a flare-up and desire to urinate. Such people need to learn how to stand up slowly in order to strengthen their problematic areas (or weak parts) of the GI system. Application of other methods (such as correct physical exercise, massaging devices, Earthing, and other methods) will quickly (in 1-2 days) help to achieve partial GI recovery. Then the person can do the same activities (e.g., standing up and walking with an ordinary speed but with an empty stomach) without negative effects.

The negative effect of sudden jerks or too-intensive body vibrations, when present in people with ulcers, can be much stronger after meals since presence of the food (or even water) in the stomach makes it much heavier. Therefore, just after meals, even smaller vibrations or jerks can open the lesions of the ulcer. In some cases, such people can easily tolerate strictly vertical vibrations (such as while travelling in a car or train), but have negative reactions to vibrations that involve side-to-side movements.

We can see that in this area (effects of mechanical factors on GI health), there is a wide spectrum of reactions. These bodily reactions also depend on the position of ulcers and

other abnormalities.

You need to pay good attention to which types of exercise are ok for you right now and which should be temporary avoided.

2.4 Allergic reactions via skin, air, and EMF fields

While other types of allergies and hypersensitivities are rare, there are still thousands of people who regularly experience digestive flare-ups due to other causes.

For example, if their skin is in contact with synthetic fabrics, especially when they are not grounded, such people will react with diarrhea, burping, bloating, and many other negative GI effects. The effect can be much stronger at low CPs (less than 20 s).

Another type of reaction leading to a digestive exacerbation can take place due to skin contact with fabrics that were washed using ordinary detergents (we considered this example above). In order to avoid such reactions, you can use either hypoallergic, or dermatologically-tested detergents or those detergents that are designed for washing the clothes of babies.

Certain chemicals in air, such as tree pollen, some perfumes, smoke (including secondhand smoke) and other chemicals, can trigger digestive flare-ups or cause a chronic reaction, leading to constant inflammation.

Finally, there are cases when exposure to EMF (electromagnetic fields) produces a nearly-immediate adverse digestive response. This can take place due to wearing a cell phone in a pocket for only for 1-2 minutes or standing for a few seconds next to a working microwave, kettle or electrical oven.

2.5 Negative effects of some breathing exercises

There are 2 types of dangers due to breathing exercises and manipulation of breathing.

A. When solid food is in the stomach

Many breathing students get so obsessed with reduced breathing that they start doing it nearly all the time or whenever they are awake. While this strategy can help to increase the CP and improve one's health for some students, many people get problems when they do RB with solid food in the stomach. With food in the stomach, only people with very strong stomachs and good digestion are able to get benefits from light air hunger and increased CO₂ (without any damage). Most people need to avoid any breathing manipulations during and after meals until the stomach is empty.

B. When biofilms are present

Breathing exercises and breath holds can also cause problems even when the stomach has no solid food. An increase in CO₂ is a chemical trigger that causes mechanical effects (intensified peristalsis) and enhanced sensitivity of the immune system. Therefore, strong air hunger, long pauses, and large CO₂ increases; all these factors can lead to intensive peristaltic waves that can destroy already-inflamed villi. Here is an example:

A person with about 25 s for their current CP starts practicing an intensive breathing session and increases his results for up to 35 or higher numbers for intermediate breath holds while doing Buteyko reduced breathing with strong air hunger. This immediately causes unquenchable thirst and ear buzzing, with bloating and burping appearing later. Even though the final CP after the session is higher, the final heart rate, due to increased inflammation, also gets higher. Within 1 hour after the session, the CP drops to about 20-25 s. Later effects are increased urination, intestinal gas, greasy stool (with increased soiling), cold feet, poor mood, and many others. Why do these effects take place?

Since many people with digestive problems suffer from GI dysbiosis, abnormal GI flora in the gut, and biofilms in the small intestine, this sudden CO₂ and CP increase leads to intensive peristalsis since the body tries to get rid of pathological content in the small and large intestines. This effect of strong peristalsis is generally beneficial: the gut tries to flush out pathogens and their toxins. Such a positive reaction, in the form of diarrhea, takes place, for example, after food poisoning. Higher CO₂ and CPs intensify this effect: you probably noticed that it is much easier to have a bowel movement with breath holds and reduced breathing. (In fact, instead of straining the abdominal muscles, people should do reduced breathing to have an easier bowel movement.)

However, when the mucosal surface of the small intestine is inflamed and covered with biofilms, the damaged villi are weak. Intensive peristaltic waves can easily cause the villi covered with pathogens to be broken and wiped down along the GI tract. All these processes take place beyond the stomach and, as a result, broken villi cannot be digested and used by the body. Instead, these nutrients start to putrefy in the large colon, which, in such cases, is full of pathogens that will "enjoy" proteins and other nutrients from the broken villi in the warm moist conditions of the large colon. This, in turn, will produce toxins in the blood, offensive smell before or during the next bowel movement, increased soiling, marks on the toilet, and other negative effects.

Such a severe GI reaction due to breathing exercises occurs in students with existing GI damage due to colitis, Crohn's disease, IBS (irritable bowel syndrome), and some other conditions with biofilms on the lining of the small intestine.

Sometimes, the gut is so damaged that even a light reduced breathing with food in the stomach or the CP test on an empty stomach can cause a GI exacerbation.

The tricky part here is that such flare-ups are easy to induce. The body readily "accepts" reduced breathing and makes a quick transition (in 1-2 minutes) to higher CO₂ with a large temporary CP increase. This is particularly easy to achieve with maximum breath holds or maximum pauses.

In contrast, when biofilms are absent, and the same (or other) person practices reduced breathing, it takes much more effort to slow down breathing due to normal (inherent) resistance of the breathing center to higher CO₂. As a result, one may spend 10-12 minutes on breathing exercises before the breathing center yields to higher CO₂.